

MICHIGAN  
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION  
FOR  
**MATERIALS & WORKMANSHIP PAVEMENT WARRANTY**  
**NEW/RECONSTRUCTED BITUMINOUS PAVEMENT**

C&amp;T:SCB

1 of 11

07-02-01

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**a. Description.** The materials and workmanship pavement warranty shall consist of the warranty bond and the terms of this special provision, including the appendix. This special provision establishes the common terms and definitions applied to all pavement projects requiring a warranty (the warranted work). The appendix contains information unique to each pavement fix. The Materials & Workmanship Pavement Warranty warrants the Department against defects in materials and workmanship.

**b. Definitions.**

1. **Materials & Workmanship Warranty** - The Contractor is responsible for correcting defects in the pavement caused by elements within the Contractor's control (i.e., the materials supplied and the workmanship), during the warranty period. Since the Department is responsible for the pavement design, the Contractor assumes no responsibility for defects that are design related. If a defect is attributable to both, the materials and/or workmanship, and the design, responsibility for correcting the defect shall be shared by the Department and the Contractor; the Contractor is responsible for the percentage of fault attributable to the workmanship and/or materials, and the Department is responsible for the percentage of fault attributable to the design.
2. **Acceptance Date of Construction** - The date when the warranted work is complete and confirmed in writing on the initial acceptance document, by the Department, to be in compliance with the contract specifications and is open to traffic. This is the date of initial acceptance and constitutes the start date for the warranty period. There may be more than one acceptance date of construction for a project.
3. **Warranty Bond** - A bond issued by a surety which guarantees that the warranty requirements will be met.
4. **Conflict Resolution Team (CRT)** - The five-person team responsible for resolving disputes between the Department and the Contractor regarding any claim of non-compliance with the warranty requirements.

5. Driving Lane(s) - The delineated pavement surface used by traffic and the portion of the pavement considered warranted work. Each of the following is considered a separate driving lane.
- Each individual mainline lane.
  - The sum of all ramp lanes and the associated acceleration/deceleration lanes is considered a separate driving lane.
  - The sum of all auxiliary lanes, such as passing lanes and turn lanes, is considered a separate driving lane.

Approaches, driveways, shoulders and adjoining transition tapers between various types of pavement are not considered driving lanes for the purpose of this provision.

6. Warranty Work - Corrective action taken to bring the warranted work into contract compliance.

**c. Initial Acceptance.** The Department and the Contractor shall jointly review all completed warranted work, or a portion thereof, as determined by the Department. If the work does not meet contract requirements, the Contractor shall make all necessary corrections, at their expense, prior to initial acceptance. Initial acceptance will occur as soon as the Department confirms in writing, on the initial acceptance form, that contract requirements have been met for the warranted work. The date on which initial acceptance occurs is termed the Acceptance Date of Construction.

Initial acceptance will be documented and executed jointly by the Department and the Contractor on a form furnished by the Department. A copy of the form will be sent to the Contractor's warranty bond surety agent by the Department. Neither the initial acceptance nor any prior inspection, acceptance or approval by the Department diminishes the Contractor's responsibility under this warranty.

The Department may accept the work and begin the warranty period, excluding any area needing corrective work, to accommodate seasonal limitations or staged construction.

Acceptance of material, in penalty, under the Department's quality assurance program will not relieve the Contractor from meeting the material and workmanship warranty requirements for the accepted material.

**d. Warranty Bond.** The Contractor shall furnish a single term warranty bond, in an amount stipulated in the appendix, prior to contract award. The effective starting date of the warranty bond shall be the Acceptance Date of Construction. The warranty bond will be

released at the end of the warranty period or after all warranty work has been satisfactorily completed, whichever is latest.

**e. Rights and Responsibilities of the Department.** The Department:

1. Reserves the right to approve the schedule proposed by the Contractor to perform warranty work.
2. Reserves the right to approve all materials and specifications used in warranty work.
3. Reserves the right to determine if warranty work performed by the Contractor meets the contract specifications.
4. Reserves the right to perform, or have performed, routine maintenance during the warranty period, which routine maintenance will not diminish the Contractor's responsibility under the warranty.
5. Reserves the right, if the Contractor is unable, to make immediate emergency repairs to the pavement to prevent an unsafe road condition as determined by the Department. The department will attempt to notify the contractor that action is required to address an unsafe condition. However, should the contractor be unable to comply with this requirement, to the Department's satisfaction and within the time frame required by the Department, the Department will perform, or have performed any emergency repairs deemed necessary. Any such emergency repairs undertaken will not relieve the contractor from meeting the warranty requirements of this Special Provision. Any costs associated with the emergency repairs will be paid by the contractor if it is determined the cause was from defective materials and/or workmanship.
6. Is responsible for monitoring the pavement throughout the warranty period and will provide the Contractor all written reports of the surface treatment's condition related to the warranty requirements. The Contractor shall not be relieved of any responsibility based upon a claim that the Department failed to adequately monitor the pavement or to report its findings to the Contractor.
7. Is responsible for notifying the Contractor, in writing, of any corrective action required to meet the warranty requirements.

**f. Rights and Responsibilities of the Contractor.** The Contractor:

1. Shall warrant to the Department that the warranted work will be free of defects in materials and workmanship. The warranty bond shall be described on a form furnished by the Department. The completed form shall be submitted to the Department prior to award of contract.
2. Is responsible for performing all warranty work including, but not limited to, maintaining traffic and restoring all associated pavement features, at the Contractor's expense.
3. Is responsible for performing all temporary or emergency repairs, resulting from being in non-compliance with the warranty requirements, using Department approved materials and methods.
4. Shall notify the Department and submit a written course of action for performing the needed warranty work a minimum of ten calendar days prior to commencement of warranty work, except in the case of emergency repairs as detailed in this special provision. The submittal must propose a schedule for performing the warranty work and the materials and methods to be used.
5. Shall follow a Department approved maintaining traffic plan when performing warranty work. All warranty work shall be performed under permit issued by the Region Utilities & Permits Engineer.
6. May be responsible for reimbursing the Department a portion of any incentive payments paid to the Contractor for early completion of the original work. Reimbursements will be required if the proposed maintaining traffic plan for corrective action requires lane closures during peak hour traffic. Peak hours will be determined by the Region Traffic and Safety Engineer. The daily reimbursement amount shall not exceed twenty five percent of the original daily earned incentive payment. The Department shall determine the actual percentage on a project by project basis.
7. Is required to supply to the Department original documentation that all insurance required by the contract is in effect during the period(s) that warranty work is being performed, as required by subsection 107.10 of the 1996 Standard Specifications for Construction.
8. Shall furnish to the Department, in addition to the regular performance and lien bond for the contract, supplemental performance and lien bonds covering any warranty work being performed. These supplemental bonds shall be furnished

prior to beginning any warranty work, using Department approved forms. These supplemental bonds shall be in the amount required by the Department to cover the costs of warranty work.

9. Shall complete all warranty work prior to conclusion of the warranty period, or as otherwise agreed to by the Department.
10. Shall be liable during the warranty period in the same manner as contractors currently are liable for their construction related activities with the Department pursuant to the 1996 Standard Specifications for Construction, including, but not limited to subsections 103.06, 107.10 and 107.11. This liability shall arise and continue only during the period when the Contractor is performing warranty work. This liability is in addition to the Contractor performing and/or paying for any required warranty work, and shall include liability for injuries and/or damages and any expenses resulting therefrom which are not attributable to normal wear and tear of traffic and weather, but are due to non-compliant materials, faulty workmanship, and to the operations of the Contractor as set forth more fully in subsections 103.06, 107.10 and 107.11 of the 1996 Standard Specifications for Construction.

**g. Evaluation Method.** The Department will conduct pavement evaluations by dividing the project into segments. Each individual driving lane will be divided into segments of 160 meters in length for measuring and quantifying the condition parameters. Evaluation will include use of both the Department's Pavement Management System and/or field pavement condition reviews. This evaluation may be waived in emergency situations.

The beginning point for laying out segments will be the Point of Beginning (POB) of the project. Segments will be laid out consecutively to the Point of Ending (POE) of the project. The original segmentation of the project will be used for all successive reviews throughout the warranty period.

**h. Warranty Requirements.** Warranty work will be required when the following two criteria are met as a result of a defect in materials and/or workmanship.

Criterion 1 - The threshold limit for a condition parameter is exceeded, and

Criterion 2 - The maximum allowable number of defective segments is exceeded for one or more condition parameters for a driving lane.

Specific threshold limits and segment limits are covered in the appendix.

To determine whether the failure to meet the warranty criteria is a result of defects in materials and/or workmanship, a joint field investigation by the Department and the Contractor will be

conducted. The Department and Contractor may elect to have a forensic investigation conducted. The decision to undertake a forensic investigation, the scope of it, and the selection of the party to conduct it will be agreed to by the Department and the Contractor. The forensic investigation will be conducted following the "Material and Workmanship Forensic Investigation Procedure". If agreement cannot be reached a Conflict Resolution Team (CRT) may be convened in accordance with this special provision. The CRT will then decide the need for a forensic investigation, its scope and the party to conduct the investigation. All costs related to the forensic investigation will be shared proportionately between the Contractor and the Department based on the determined cause of the condition.

During the warranty period, the Contractor will not be held responsible for pavement distresses that are caused by factors unrelated to materials and workmanship. These include, but are not limited to: chemical and fuel spills, vehicle fires, snow plowing, and quality assurance testing such as coring. Other factors considered to be beyond the control of the Contractor which may contribute to pavement distress will be considered by the Engineer on a case by case basis upon receipt of a written request from the Contractor.

**i. Conflict Resolution Team.** The sole responsibility of the Conflict Resolution Team (CRT) is to provide a decision on disputes between the Department and the Contractor regarding application or fulfillment of the warranty requirements. The CRT will consist of five members:

- Two members selected, and compensated by the Department.
- Two members selected and compensated by the Contractor.
- One member mutually selected by the Department and the Contractor. Compensation for the third party member will be equally shared by the Department and the Contractor.

If a dispute arises on the application or fulfillment of the terms of this warranty, either party may serve written notice that appointment of a CRT is required.

At least three members of the CRT must vote in favor of a motion to make a decision. The CRT may decide to conduct a forensic investigation, will determine the scope of work and select the party to conduct the investigation. All costs related to the forensic investigation will be shared proportionately between the Contractor and the Department based on the determined cause of the condition.

**j. Emergency Repairs.** If the Department determines that emergency repairs are necessary for public safety, the Department or its agent may take repair action. Emergency repairs must be authorized by the Region Engineer.

Prior to emergency repairs, the Department will document the basis for the emergency action. In addition, the Department will preserve evidence of the defective condition.

**k. Non-extension of Contract.** This Special Provision shall not be construed as extending or otherwise affecting the claim process and statute of limitation applicable to this Contract.

**l. Measurement and Payment.** All costs, including engineering and maintaining traffic costs, associated with meeting the requirements of this special provision are considered to be included in the Contract unit prices for the warranted work items regardless of when such costs are incurred throughout the warranty period. These costs include but are not limited to, all materials, labor and equipment necessary to complete required warranty work.

**MATERIALS & WORKMANSHIP WARRANTY APPENDIX FOR  
NEW/RECONSTRUCTED BITUMINOUS PAVEMENT**

- A1. Application.** This appendix applies to pavement warranties on new and reconstructed bituminous pavement placed on an unbound or stabilized aggregate base.
- A2. Limits of Warranted Work.** The warranted work includes all bituminous on driving lanes within the project limits unless otherwise indicated on the plans.
- A3. Warranty Term.** The warranty term will be five years from the date of Initial Acceptance otherwise termed the Acceptance Date of Construction.
- A4. Warranty Bond.** The Contractor will supply a warranty bond equal to \$1,000,000. or five percent of the total contract amount whichever is less.
- A5. Initial Ride Quality Acceptance Criteria.** Initial Ride Quality requirements are outlined in other contract documents.
- A6. Condition Parameters.** Condition parameters are used to measure the performance of the bituminous pavement during the warranty term. Each condition parameter has a threshold level applied to each segment and a maximum number of defective segments allowed before corrective action (warranty work) is required.

Definitions

Transverse Crack - A crack, at least 1.5 meters in length, that is oriented primarily in the transverse direction versus the longitudinal direction. That is, the angle between the overall crack line and the transverse line is less than 45 degrees. It can be either straight or irregular in direction.

Longitudinal Crack/Open Joint - A crack or open joint, at least 1.5 meters in length, that is oriented primarily in the longitudinal direction versus the transverse direction. That is, the angle between the overall crack line and the centerline is less than 45 degrees. It can exist anywhere in the driving lane; i.e., at the pavement centerline joint, wheel path, center of lane, or lane/shoulder joint.

De-bonding - A physical separation of the new pavement surface from the underlying pavement surface. De-bonding will be visually identified as shoving, or the loss of the new surface course. Surface potholes, regardless of depth, will be classified as de-bonding, to the extent that the condition was derived from de-bonding of the new surface course.



Raveling - Surface disintegration, due to the loss of coarse or fine aggregate material, that occurs over an area or in a continuous longitudinal strip.

Flushing - The accumulation of excess asphalt binder on the pavement surface that creates a shiny, reflective condition and becomes tacky to the touch at high temperatures.

Rutting - A longitudinal surface depression in the wheel path. It may have associated transverse displacement or humping.

Alligator Cracking - Parallel longitudinal cracks with transverse tears between them exhibiting a pattern similar to an alligator hide. An Alligator Crack typically starts in a wheel path and may extend to other lane locations.

Block Cracking - Transverse and longitudinal cracking that has progressed to a pattern that the pavement is broken into blocks of size less than 12' by 12'. The shape of each block may be irregular.

**A7. Warranty Requirements.** The table lists the allowable threshold limit for each condition parameter within each segment and the maximum number of allowable segments within a driving lane for each condition parameter. If any of the warranty requirements are not met, as a result of a defect in materials and/or workmanship, corrective action (warranty work) is required.

The defective segments for surface distress may or may not be contiguous to necessitate corrective action. The maximum allowable number of defective segments for each condition parameter applies to each driving lane in each travel direction. Each driving lane shall be evaluated independent of adjacent driving lanes. Any pavement surface requiring removal/replacement to correct deficiencies, for any condition parameter, shall be replaced full-width across the driving lane.

<b>WARRANTY REQUIREMENTS</b>		
CONDITION PARAMETER <sup>(4)</sup>	THRESHOLD LIMITS PER SEGMENT (Length = 160 m)	MAX. DEFECTIVE SEGMENTS PER DRIVING LANE- KILOMETER <sup>(1)</sup>
Transverse Cracking	2	1
Longitudinal Cracking/ Open Joint	10% of segment length	1
De-bonding	5% of segment length	1
Raveling	8% of segment length	1
Flushing	4% of segment length	1
Rutting <sup>(3)</sup>	ave. rut depth = 10 mm <sup>(2)</sup>	1
<p>(1) The maximum allowable number of defective segments per driving lane is determined by multiplying by the length of the specific driving lane in kilometers.</p> <p>(2) The rut depth threshold applies to each wheel path independently.</p> <p>(3) The pavement surface will be evaluated for the presence of rutting on each driving lane throughout the warranty period. The pavement surface will be measured beginning at the POB and every 40 m thereafter to determine average rut depth to quantify rutting for a particular 160 m segment.</p> <p>Rut measurements will be done using a straight rigid device that is a minimum of 2 m long and of sufficient stiffness that it will not deflect from its own weight, or a wire under sufficient tension to prevent sag when extended 2 m. Measurements will be taken by placing this "straightedge" across the pavement surface perpendicular to the direction of travel. The straightedge shall contact the surface on at least two bearing points with one located on either side of the rut. The straightedge is properly located when sliding the straightedge along its axis does not change the location of the contact points. Rut depth is then measured at the point of greatest perpendicular distance from the bottom of the straightedge to the pavement surface.</p> <p>(4) Alligator and/or Block Cracking will not be an acceptable condition, and will be removed and replaced as approved by the Engineer.</p>		

**A8. Corrective Actions.-** The following corrective actions are recommended to outline typical acceptable treatments for the various condition parameters. The Department will accept the listed corrective action if the action addresses the cause of the condition parameter. The Contractor may use an alternative action subject to Department approval.

CONDITION PARAMETER <sup>(2)</sup>	RECOMMENDED ACTION
Transverse Cracking	Cut and Seal
Longitudinal Cracking	Cut and Seal
De-bonding	Mill and Resurface affected courses
Raveling	Mill and Resurface affected courses
Flushing	Mill and Resurface top course
Rutting	Microsurface or Mill and Resurface <sup>(1)</sup>

(1) Recommended action is dependent on the depth of the rut susceptible material.

(2) Any areas exhibiting Alligator or Block Cracking shall be removed and replaced as directed by the Engineer.